

### **Claims**

What is claimed is:

- 1) A system for predicting a target file directory, comprising:  
a component which analyzes probabilities and utilities associated with determining potential target directories for storing and accessing data.
- 2) The system of claim 1, further comprising:  
a component for building a subset of the potential target directories that are predicted to be the target directory.
- 3) The system of claim 1, wherein the utilities are functions of navigation costs associated with traversing from a displayed node from the directory to at least one of the potential target directories.
- 4) The system of claim 1, wherein expected utilities of candidate nodes to display from a directory structure are computed as functions of probabilities of target information being at a node, and the navigation costs associated with traversing from the node to at least one of the potential target directories.
- 5) The system of claim 3, wherein the navigation costs are assigned by at least one of user selections and encoded within the system.
- 6) The system of claim 1, wherein the potential target directories are determined from at least one of a local computer system and a remote computer system.
- 7) The system of claim 1, wherein the probabilities are a function of recent and long-term file activity within a directory.

- 8) The system of claim 7, wherein the long term file activity is determined from a predetermined time horizon.
- 9) The system of claim 7, wherein the recent file activity is determined from frequency of access to a file.
- 10) The system of claim 9, further comprising a background monitor to determine file access frequency.
- 11) The system of claim 1, further comprising a list scan penalty for reducing probabilities associated with scanning lists within a directory.
- 12) The system of claim 8, wherein the list scan penalty is determined as an exponential function that decreases as the number of elements on the list increases.
- 13) A method for determining a potential target node for directory operations, comprising:
  - assigning probabilities and utilities to a plurality of potential target nodes;
  - determining an expected utility from the probabilities and utilities associated with the plurality of target nodes; and
  - displaying a candidate list of likely nodes to a user based upon the expected utility.
- 14) The method of claim 13, wherein the assigned probabilities and utilities are multiplied together to form a product at each of the plurality of target nodes.

- 15) The method of claim 14, wherein the products from each of the plurality of target nodes are summed together to determine the expected utility for one of the plurality of potential target nodes.
- 16) The method of claim 13, wherein the utilities are related to navigation costs associated with traversing from a displayed directory to at least one of the potential target directories.
- 17) The method of claim 16, wherein the navigation costs are assigned by at least one of user selections and encoded within the system.
- 18) The method of claim 13, wherein the potential target nodes are determined from at least one of a local computer system and a remote computer system.
- 19) The method of claim 13, wherein the probabilities are a function of recent and long-term file activity within a directory.
- 20) The method of claim 19, wherein the long-term file activity is determined from a predetermined time horizon.
- 21) The method of claim 19, wherein the recent file activity is determined from frequency of access to a file.
- 22) The method of claim 21, further comprising,  
monitoring a user to determine file access frequency.
- 23) The method of claim 13, further comprising,  
determining a list scan penalty for reducing probabilities associated with scanning lists within a directory.

- 24) The method of claim 23, wherein the list scan penalty is determined as an exponential function that decreases as the number of elements on the list increases.
- 25) A computer-readable medium storing the computer-executable component of claim 1.
- 26) A system for determining a potential target node for directory operations, comprising:
- means for assigning probabilities and utilities to a plurality of potential target nodes;
  - means for determining an expected utility from the probabilities and utilities associated with the plurality of target nodes; and
  - means for displaying a candidate list of likely nodes to a user based upon the expected utility.
- 27) A signal adapted to be transmitted between at least two processes, comprising:
- a predicting component for communicating information associated with predicting a target file directory; and
  - an analyzing component which analyzes probabilities and utilities associated with determining potential target directories *via* the signal for storing and accessing data.
- 28) The signal of claim 27, further comprising:
- a building component for building a subset of the potential target directories that are predicted to be the target directory.
- 29) The signal of claim 27, wherein the potential target directories are determined from at least one of a local computer system and a remote computer system.